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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/751,868	12/29/2000	Peter J. Radusewicz	11SW-4908	7946

7590 11/04/2002  
John S. Beulick  
Armstrong Teasdale LLP  
Suite 2600  
One Metropolitan Square  
St. Louis, MO 63102

EXAMINER

POLK, SHARON A

ART UNIT PAPER NUMBER

2836

DATE MAILED: 11/04/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/751,868

Applicant(s)

RADUSEWICZ, PETER J.

Examiner

Sharon Polk

Art Unit

2836

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 30 August 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-28 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 December 2000 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## DETAILED ACTION

### *Response to Arguments*

1. Applicant's arguments with respect to claims 1-28 have been considered but are moot in view of the new ground(s) of rejection.

### *Drawings*

2. The drawing objection is still maintained. Applicant's representative has misquoted the rule. Under 37 C.F.R. § 1.83(a), conventional features disclosed in the description of the claims, where their detailed illustration is not essential to the proper understanding of the invention, **should be illustrated in the drawing in the form of a graphical drawing or a labeled representation (e.g., labeled rectangular box).** (emphasis added).

### *Claim Rejections - 35 USC § 112*

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-28 are rejected under 35 U.S.C. 112, second paragraph, as being incomplete for omitting essential structural cooperative relationships of elements, such omission amounting to a gap between the necessary structural connections. See MPEP § 2172.01. The omitted structural cooperative relationships are: how the elements of the automatic transfer switch controller/system are interconnected. As claimed the elements are not connected to one another.

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

**Claims 1-3, 15-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vesce et al., US 4,593,213, in view of Sheppard et al., US 5,739,594 and Allen et al., US 5,497,332.**

With regard to **claims 1, and 15**, Vesce et al. teach:

a switch controller comprising:

a power supply circuit (112, 113) to regulate and filter input power;

at least one transformer (122) to convert utility and generator power sources into power supply voltages and voltage sensing sources;

a voltage sense signal (114) conditioning circuit;

**Vesce et al. teach the claimed invention except for:**

a solenoid driver circuit to drive automatic transfer switch solenoids;

a user interface to said microcontroller for operator entry of instructions; and

at least one LED indicator interfaced to said microcontroller to indicate operator entry of instructions at said user interface;

an embedded microcontroller configured to control logic functions and to monitor generator voltages and frequencies.

**Sheppard et al. teach** an automatic transfer switch controller (fig. 1) a solenoid driver circuit (16) to drive automatic transfer switch solenoids a user interface to said microcontroller (34) for operator entry of instructions; and

at least one LED indicator interfaced to said microcontroller (32, 206) to indicate operator entry of instructions at said user interface.

**Allen et al. teach** an embedded microcontroller (col. 3, lines 34-35) configured to control logic functions and to monitor generator voltages and frequencies.

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Vesce et al. with the teachings of Sheppard et al. for the purpose of providing more specific annunciation of diagnostics than prior art controllers by utilizing a display and control routines which detect switch positions, malfunctions in the transfer switch, and misadjustment of the limit switches (col. 2, lines 8-11).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Vesce et al. with the teachings of Allen et al. for the purpose of providing a digital monitor and controller for transducing and monitoring the performance of DC or AC generator units, as well as for controlling the loads connected thereto in small power plants (col. 2, lines 23-26).

With regard to **claims 2, and 16**, adding the limitation of the microcontroller comprises at least one analog-to-digital converter, Allen et al. teaches this feature (col. 3, lines 50).

With regard to **claims 3, and 17**, adding the limitation of the voltage sense signal conditioning circuit comprises low pass filters configured to remove noise from the

power supply thereby enabling said microcontroller analog-to-digital converter to correctly sense voltage and frequency. Allen et al. teach this feature (col. 4, lines 53-55).

**Claims 4, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vesce et al., in view of Sheppard et al., and Allen et al., as applied to claims 1, and 15, and further in view of Kern et al., US 6,181,038.**

With regard to **claims 4, and 18**, Vesce et al. as modified by Sheppard et al. and Allen et al. teach the claimed invention except for a solenoid driver circuit is configured with relays. Kern et al. teach this feature (77, 79, 92).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Vesce et al. as modified by Sheppard et al. and Allen et al. with the teachings of Kern et al. for the purpose of providing a transfer mechanism which allows various branch circuits of a home to be brought on line separately, rather than at once to allow for loads with large starting requirements to be brought up to speed before bringing the other circuit branches of the home on line thereby insuring the adequate power is provided by the generator to start such loads (col. 1, lines 58-64).

**Claims 5, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vesce et al., in view of Sheppard et al., and Allen et al., as applied to claims 1, and 15, and further in view of Fulks et al., US 5,703,748.**

Art Unit: 2836

With regard to **claims 5, and 19**, Vesce et al. as modified by Sheppard et al. and Allen et al. teach the claimed invention except for the solenoid driver circuit is configured with solid state devices. Fulks et al. teach this feature (fig. 8).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Vesce et al. as modified by Sheppard et al. and Allen et al. with the teachings of Fulks et al. for the purpose of providing a solenoid driver circuit that reduces the armature velocity and increases armature transit time of the solenoid while, at the same time ensuring high solenoid performance (col. 1, lines 28-31).

**Claims 9-10, and 23-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vesce et al., in view of Sheppard et al., and Allen et al., as applied to claims 1, and 15, and further in view of Generac® Power Systems, Inc., "E" Control Panel Brochure.**

With regard to **claims 9-10, and 23-24**, Vesce et al. as modified by Sheppard et al. and Allen et al. teach the claimed invention except for comprising a generator control board configured to interface with said microcontroller and to sense at least one of oil pressure and temperature, and configured with a set of dry contact outputs. Generac® teaches these features (see entire document). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Vesce et al. as modified by Sheppard et al. and Allen et al. with the teachings of Generac® for the purpose of providing an economical control option that combines the advantages of digital technology with traditional analog meters for voltage, current, and frequency.

**Claims 12, and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vesce et al., in view of Sheppard et al., and Allen et al., as applied to claims 1, and 15, and further in view of Smith, US 5,920,129.**

With regard to **claims 12, and 26**, Vesce et al. as modified by Sheppard et al. and Allen et al. teach the claimed invention except for a load shed I/O option board configured to disconnect loads before said controller transfers loads to a generator power source, preventing generator over load. The examiner finds that this feature is a conventional break before make feature, as taught by Smith (col. 1, lines 22-26).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Vesce et al. as modified by Sheppard et al. and Allen et al. with the teachings of Smith for the purpose of avoiding any potential surges that may occur as a result of two unsynchronized sources applying power to the load simultaneously (col. 1, lines 26-29).

**Claims 13, and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Vesce et al., in view of Sheppard et al., and Allen et al., as applied to claims 1, and 15, and further in view of Murphy<sup>®</sup> Generator Control Panel MGC900 Series Brochure.**

With regard to **claims 13, and 27**, Vesce et al. as modified by Sheppard et al. and Allen et al. teach the claimed invention except for said microcontroller is configured with at least one of a generator cool down timer, a generator warm-up timer, a loss of power delay timer, a generator fail-to-start timer, a generator crank timer, a generator



Art Unit: 2836

pause timer, a generator overload timer and an utility stabilization before switchback timer. Murphy® teaches this feature (see front page).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify Vesce et al. as modified by Sheppard et al. and Allen et al. with the teachings of Murphy® for the purpose of providing economical engine/generator, manual or automatic start/stop control for applications required by NFPA-110 approvals.

***Allowable Subject Matter***

5. Claims 6-8, 11, 14, 20-22, 25, and 28 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: With regard to claims 6-8, 14, 20-22, and 28, the prior art of record does not teach or suggest an automatic transfer switch controller having an embedded microcontroller which recognizes jumper selections, in combination with the other recited elements of claims 1 and 15, respectively. Additionally, regarding claims 11, and 25, the prior art of record does not teach or suggest an automatic transfer switch controller which expands single phase sensing to three phase sensing on utility and generator sources.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably

Art Unit: 2836

accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

***Citation of Pertinent Prior Art***


6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Caterpillar® Automatic Transfer Switch Brochure.

***Communications with the PTO***

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sharon Polk whose telephone number is 703-308-6257. The examiner can normally be reached on M-F 7-3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on 703-308-3119. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9318 for regular communications and 703-872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0956.

  
10-31-02

STEPHEN W. JACKSON  
PRIMARY EXAMINER

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October 24, 2002

Sharon Polk  
Patent Examiner – Art Unit 2836